

What is claimed is:

1. An aerosolization apparatus comprising:
5 a body defining an inlet opening, an outlet opening, and an aerosolization chamber between the inlet opening and the outlet opening,
wherein the aerosolization chamber is adapted to receive an elongated receptacle containing a pharmaceutical formulation and wherein the elongated receptacle rotates end-over-end about an axis substantially orthogonal to an axis passing through the outlet opening
10 when air or gas flows through the body.

2. An aerosolization apparatus according to claim 1 further comprising an opening mechanism for creating an opening in the receptacle.

15 3. An aerosolization apparatus according to claim 2 wherein the opening mechanism comprises a sharpened tip moveable within the aerosolization chamber.

4. An aerosolization apparatus according to claim 1 further comprising the receptacle.
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5. An aerosolization apparatus according to claim 4 wherein the receptacle comprises a capsule.

25 6. An aerosolization apparatus according to claim 5 wherein the capsule comprises a wall comprising one or more of gelatin, hydroxypropyl methylcellulose, polyethyleneglycol-compounded hydroxypropyl methylcellulose, hydroxypropylcellulose, and agar.

30 7. An aerosolization apparatus according to claim 5 wherein the receptacle contains a powder pharmaceutical formulation.

8. An aerosolization apparatus according to claim 7 wherein the powder pharmaceutical formulation comprises particles having a mass median diameter less than 10 μm .

5 9. An aerosolization apparatus according to claim 7 wherein the powder pharmaceutical formulation has a moisture content below 5% by weight.

10 10. An aerosolization apparatus for delivering an aerosolized pharmaceutical formulation to a user's respiratory tract, the apparatus comprising:

a body defining an inlet opening, an outlet opening, and an aerosolization chamber between the inlet opening and the outlet opening,

wherein the aerosolization chamber is adapted to receive an elongated receptacle containing a pharmaceutical formulation and wherein the elongated receptacle rotates end-over-end about an axis substantially orthogonal to an axis parallel to an inhalation direction when the user inhales to cause air or gas to pass through the body.

15 11. An aerosolization apparatus according to claim 10 wherein the inhalation direction is a direction coincident with an axis passing through a mouthpiece of the apparatus.

20 12. An aerosolization apparatus according to claim 10 further comprising an opening mechanism for creating an opening in the receptacle.

13. An aerosolization apparatus according to claim 12 wherein the opening mechanism comprises a sharpened tip moveable within the aerosolization chamber.

25 14. An aerosolization apparatus according to claim 10 further comprising the receptacle.

30 15. An aerosolization apparatus according to claim 14 wherein the receptacle comprises a capsule.

16. An aerosolization apparatus according to claim 15 wherein the capsule comprises a wall comprising one or more of gelatin, hydroxypropyl methylcellulose, polyethyleneglycol-compounded hydroxypropyl methylcellulose, hydroxypropylcellulose, and agar.

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17. An aerosolization apparatus according to claim 15 wherein the receptacle contains a powder pharmaceutical formulation.

18. An aerosolization apparatus according to claim 17 wherein the powder pharmaceutical formulation comprises particles having a mass median diameter less than 10 μm .

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19. An aerosolization apparatus according to claim 17 wherein the powder pharmaceutical formulation has a moisture content below 5% by weight.

20. An aerosolization apparatus according to claim 10 wherein the inlet opening is shaped to cause a swirling air or gas flow through the chamber.

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